

# Texas Water Development Board



# WATER Conditions

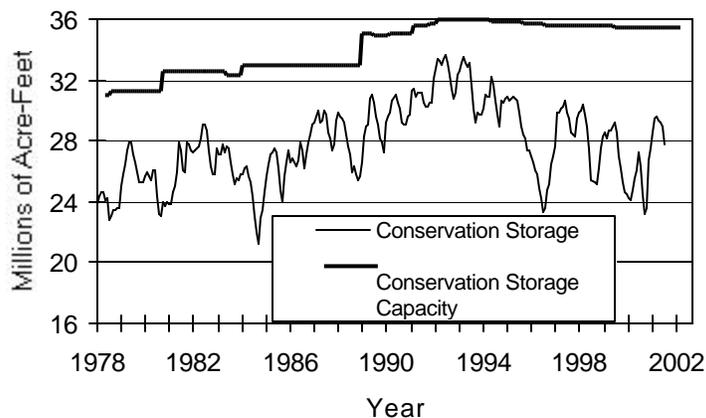
## RESERVOIR STORAGE

*July 2001*

Near the end of July, the 77 reservoirs monitored for this report held 27.7 million acre-feet in conservation storage, or 80.5 percent of the conservation storage capacity of the State's major reservoirs. Statewide storage decreased by 1.16 million acre-feet (-3.4% of conservation storage capacity) during the month. Compared to July 2000, storage is up 1.45 million acre-feet (+4.2%), but below the historical median for this time of year.

Storage decreased in all regions this month. Only the East Region remained near capacity (96.6%). The Trans-Pecos (11.9%) and Southern (21.0%) regions remained below 25%. Storage is at 100% in 12 reservoirs, 11 fewer than last month. Storage is down relative to this time last year in the High Plains (-11.8%) and Trans-Pecos (-8.9%) regions.

### CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS



Current data are based on elevation near end of month at 77 reservoirs that represent 98 percent of total conservation storage capacity in Texas reservoirs having a capacity of 5,000 acre-feet or more.

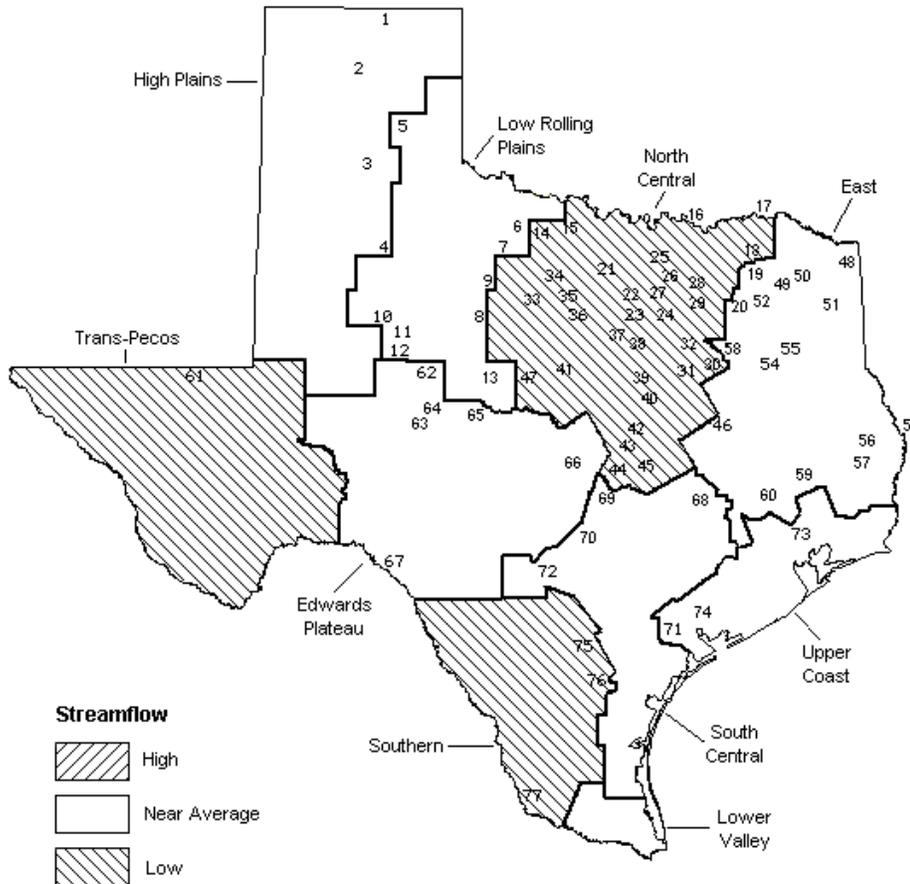
# STREAMFLOW

Of 29 reporting index stations in July, computed 30-day mean flows were high (5% - 30% exceedance) at 3 stations, near normal (30% - 70% exceedance) at 16 stations, low (70% - 95% exceedance) at 8 stations, and very low (95% - 100%) at 2 stations. In comparison to June, flows increased at 5 index stations, decreased at 22 stations, and remain unchanged at 2.

On a regional basis, flows in July were low in the North Central, Trans-Pecos, and Southern regions, and normal in all other regions. The stations reporting very low flows were on the Atascosa and Navidad Rivers.

## JULY STREAMFLOW CONDITIONS

Reservoirs Shown on Map



- |                                  |                             |
|----------------------------------|-----------------------------|
| 1. Palo Duro Reservoir           | 40. Waco Lake               |
| 2. Lake Meredith                 | 41. Proctor Lake            |
| 3. MacKenzie Reservoir           | 42. Belton Lake             |
| 4. White River Lake              | 43. Stillhouse Hollow Lake  |
| 5. Greenbelt Reservoir           | 44. Lake Georgetown         |
| 6. Lake Kemp                     | 45. Granger Lake            |
| 7. Miller's Creek Reservoir      | 46. Lake Limestone          |
| 8. Fort Phantom Hill Reservoir   | 47. Lake Brownwood          |
| 9. Lake Stamford                 | 48. Wright Patman Lake      |
| 10. Lake J. B. Thomas            | 49. Lake Cypress Springs    |
| 11. Lake Colorado City           | 50. Lake Bob Sandlin        |
| 12. Champion Creek Reservoir     | 51. Lake O' the Pines       |
| 13. Hords Creek Lake             | 52. Lake Fork Reservoir     |
| 14. Lake Kickapoo                | 53. Toledo Bend Reservoir   |
| 15. Lake Arrowhead               | 54. Lake Palestine          |
| 16. Lake Texoma                  | 55. Lake Tyler              |
| 17. Pat Mayse Lake               | 56. Sam Rayburn Reservoir   |
| 18. Cooper Lake                  | 57. B. A. Steinhagen Lake   |
| 19. Lake Sulphur Springs         | 58. Cedar Creek Reservoir   |
| 20. Lake Tawakoni                | 59. Lake Livingston         |
| 21. Bridgeport Reservoir         | 60. Lake Conroe             |
| 22. Eagle Mountain Reservoir     | 61. Red Bluff Reservoir     |
| 23. Benbrook Lake                | 62. E. V. Spence Reservoir  |
| 24. Joe Pool Lake                | 63. Twin Buttes Reservoir   |
| 25. Ray Roberts Lake             | 64. O. C. Fisher Lake       |
| 26. Lewisville Lake              | 65. O. H. Ivie Reservoir    |
| 27. Grapevine Lake               | 66. Lake Buchanan           |
| 28. Lavon Lake                   | 67. Intl. Amistad Reservoir |
| 29. Lake Ray Hubbard             | 68. Somerville Lake         |
| 30. Richland-Chambers Creek Lake | 69. Lake Travis             |
| 31. Navarro Mills Lake           | 70. Canyon Lake             |
| 32. Bardwell Lake                | 71. Coleto Creek Reservoir  |
| 33. Hubbard Creek Reservoir      | 72. Medina Lake             |
| 34. Lake Graham                  | 73. Lake Houston            |
| 35. Possum Kingdom Lake          | 74. Lake Texana             |
| 36. Lake Palo Pinto              | 75. Choke Canyon Reservoir  |
| 37. Lake Granbury                | 76. Lake Corpus Christi     |
| 38. Lake Pat Cleburne            | 77. Intl. Falcon Reservoir  |
| 39. Whitney Lake                 |                             |

**Streamflow**

- High
- Near Average
- Low

## CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake or Reservoir	No. on Map	Conservation	Conservation	Change since		Change since		
		Storage Capacity (acre-feet)	Storage Late July 2001 (acre-feet) (%)	Late June 2001 (acre-feet) (%)	Late July 2000 (acre-feet) (%)			
<b>HIGH PLAINS</b>								
Palo Duro Reservoir	1	60,900	8,000	13	-860	-1	-14,840	-24
Lake Meredith (Texas)	2	500,000	314,200	63	-14,600	-3	-67,500	-14
Lake Meredith (Texas and Oklahoma)	(2)	779,560	314,200	40	-14,600	-2	-67,500	-9
MacKenzie Reservoir	3	46,250	9,140	20	-450	-1	-150	0
White River Lake	4	31,850	9,200	29	-840	-3	-5,760	-18
<b>TOTAL</b>		<b>639,000</b>	<b>340,540</b>	<b>53</b>	<b>-16,750</b>	<b>-3</b>	<b>-88,250</b>	<b>-14</b>
<b>LOW ROLLING PLAINS</b>								
Greenbelt Reservoir	5	58,200	24,500	42	-1,260	-2	-2,550	-4
Lake Kemp	6	319,600	157,400	49	-23,800	-7	-400	0
Miller's Creek Reservoir	7	27,890	14,740	53	-1,130	-4	6,110	22
Fort Phantom Hill Reservoir	8	70,030	34,090	49	-3,220	-5	11,160	16
Lake Stamford	9	52,700	14,190	27	-1,780	-3	3,910	7
Lake J. B. Thomas	10	202,300	17,610	9	-1,600	-1	-17,590	-9
Lake Colorado City	11	30,800	17,940	58	-800	-3	-8,960	-29
Champion Creek Reservoir	12	41,600	2,350	6	-220	-1	-3,050	-7
Hords Creek Lake	13	8,600	3,800	44	-270	-3	-520	-6
<b>TOTAL</b>		<b>811,720</b>	<b>286,620</b>	<b>35</b>	<b>-34,080</b>	<b>-4</b>	<b>-11,890</b>	<b>-1</b>
<b>NORTH CENTRAL</b>								
Lake Kickapoo	14	106,000	89,080	84	-5,830	-6	40,527	38
Lake Arrowhead	15	262,100	179,500	68	-11,000	-4	65,700	25
Lake Texoma	16	2,722,300	2,394,000	88	-305,000	-11	-295,357	-11
Pat Mayse Lake	17	124,500	116,500	94	-5,700	-5	-7,247	-6
Cooper Lake	18	273,000	273,000	100	0	0	0	0
Lake Sulphur Springs	19	17,710	11,560	65	-470	-3	-6,150	-35
Lake Tawakoni	20	936,200	820,600	88	-33,600	-4	-115,600	-12
Bridgeport Reservoir	21	374,830	348,300	93	-18,800	-5	135,060	36
Eagle Mountain Reservoir	22	178,380	159,900	90	-8,300	-5	24,548	14
Benbrook Lake	23	88,200	73,240	83	-7,840	-9	-14,960	-17
Joe Pool Lake	24	175,800	175,800	100	0	0	0	0
Ray Roberts Lake	25	798,760	792,500	99	-6,260	-1	238,603	30
Lewisville Lake	26	555,000	555,000	100	0	0	211,600	38
Grapevine Lake	27	187,700	165,900	88	-10,700	-6	34,900	19
Lavon Lake	28	443,800	385,300	87	-36,400	-8	-58,500	-13
Lake Ray Hubbard	29	413,420	385,800	93	-16,500	-4	-27,620	-7
Richland-Chambers Creek Lake	30	1,103,820	1,095,000	99	-8,820	-1	-8,820	-1
Navarro Mills Lake	31	55,810	52,510	94	-3,110	-6	-3,300	-6
Bardwell Lake	32	53,580	44,460	83	-1,980	-4	-9,120	-17
Hubbard Creek Reservoir	33	317,800	138,700	44	-7,500	-2	-36,200	-11
Lake Graham	34	45,000	39,110	87	-2,450	-5	1,410	3
Possum Kingdom Lake	35	551,820	495,700	90	-25,000	-5	9,400	2
Lake Palo Pinto	36	27,650	20,970	76	-2,130	-8	-6,393	-23
Lake Granbury	37	135,680	121,800	90	-4,100	-3	-10,651	-8
Lake Pat Cleburne	38	25,300	22,610	89	-1,480	-6	-2,690	-11
Whitney Lake	39	622,800	551,900	89	-59,600	-10	-64,500	-10
Waco Lake	40	144,500	137,700	95	-6,800	-5	-6,800	-5
Proctor Lake	41	55,590	48,850	88	-3,760	-7	32,680	59
Belton Lake	42	434,500	427,200	98	-7,300	-2	19,200	4
Stillhouse Hollow Lake	43	226,060	225,700	100	-360	0	3,993	2
Lake Georgetown	44	37,010	35,530	96	-1,480	-4	12,000	32
Granger Lake	45	54,280	54,280	100	0	0	0	0
Lake Limestone	46	215,750	212,700	99	-3,050	-1	-2,400	-1
Lake Brownwood	47	143,400	115,700	81	-7,200	-5	11,600	8
<b>TOTAL</b>		<b>11,908,050</b>	<b>10,766,400</b>	<b>90</b>	<b>-612,520</b>	<b>-5</b>	<b>164,913</b>	<b>1</b>

## CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake or Reservoir	No. on Map	Conservation	Conservation		Change since		Change since		
		Storage Capacity (acre-feet)	Storage Late July 2001 (acre-feet) (%)		Late June 2001 (acre-feet) (%)	Late July 2000 (acre-feet) (%)			
<b>EAST</b>									
Wright Patman Lake	48	142,700	142,700	100	0	0	0	0	
Lake Cypress Springs	49	66,800	66,800	100	0	0	0	0	
Lake Bob Sandlin	50	202,300	198,100	98	-4,200	-2	-4,200	-2	
Lake O' the Pines	51	252,000	252,000	100	0	0	0	0	
Lake Fork Reservoir	52	635,200	635,200	100	0	0	0	0	
Toledo Bend Reservoir	53	4,472,900	4,154,000	93	-234,000	-5	-256,000	-6	
Lake Palestine	54	411,300	403,500	98	-7,800	-2	-7,800	-2	
Lake Tyler	55	73,700	73,700	100	0	0	2,526	3	
Sam Rayburn Reservoir	56	2,876,300	2,876,300	100	0	0	507,300	18	
B. A. Steinhagen Lake	57	94,200	82,960	88	-2,080	-2	3,628	4	
Cedar Creek Reservoir	58	637,050	606,800	95	-21,700	-3	-30,250	-5	
Lake Livingston	59	1,750,000	1,739,000	99	9,000	1	-11,000	-1	
Lake Conroe	60	429,900	409,000	95	-8,800	-2	35,000	8	
TOTAL		12,044,350	11,640,060	97	-269,580	-2	239,204	2	
<b>TRANS-PECOS</b>									
Red Bluff Reservoir	61	307,000	36,410	12	-6,660	-2	-30,460	-10	
TOTAL		307,000	36,410	12	-6,660	-2	-30,460	-10	
<b>EDWARDS PLATEAU</b>									
E. V. Spence Reservoir	62	488,760	67,620	14	-4,170	-1	-31,610	-6	
Twin Buttes Reservoir	63	177,800	6,000	3	-680	0	-1,919	-1	
O.C. Fisher Lake	64	119,200	5,690	5	-450	0	-5,880	-5	
O. H. Ivie Reservoir	65	554,340	282,700	51	-12,300	-2	-51,500	-9	
Lake Buchanan	66	896,980	807,500	90	-24,700	-3	146,600	16	
Amistad Reservoir (Texas)	67	1,771,030	881,000	50	-53,000	-3	-81,000	-5	
Amistad Reservoir (Texas and Mexico)	(67)	3,151,300	1,076,000	34	-53,000	-2	-71,000	-2	
TOTAL		4,008,110	2,050,510	51	-95,300	-2	-25,309	-1	
<b>SOUTH CENTRAL</b>									
Somerville Lake	68	155,060	153,000	99	-2,060	-1	16,092	10	
Lake Travis	69	1,144,100	1,032,000	90	-58,000	-5	331,200	29	
Canyon Lake	70	385,600	379,500	98	-6,100	-2	24,900	6	
Coletto Creek Reservoir	71	35,060	26,620	76	-2,000	-6	-4,240	-12	
Medina Lake	72	254,000	232,900	92	-12,900	-5	82,300	32	
TOTAL		1,973,820	1,824,020	92	-81,060	-4	450,252	23	
<b>UPPER COAST</b>									
Lake Houston	73	128,860	128,860	100	0	0	0	0	
Lake Texana	74	157,900	136,100	86	-8,300	-5	-17,000	-11	
TOTAL		286,760	264,960	92	-8,300	-3	-17,000	-6	

## CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

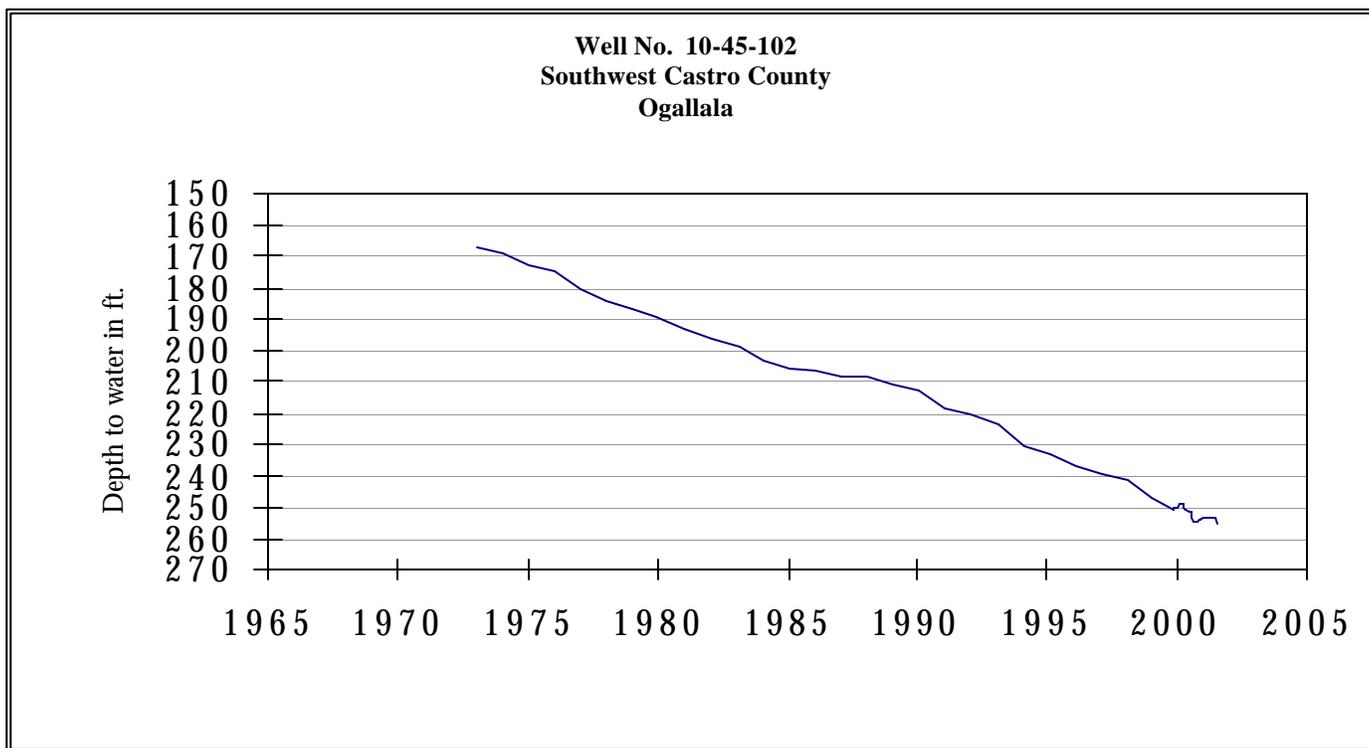
Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage Late July 2001 (acre-feet) (%)		Change since Late June 2001 (acre-feet) (%)		Change since Late July 2000 (acre-feet) (%)		
<b>SOUTHERN</b>									
Choke Canyon Reservoir	75	695,260	240,000	35	-8,000	-1	-33,000	-5	
Lake Corpus Christi	76	241,240	65,590	27	-9,540	-4	-60,210	-25	
Falcon Reservoir (Texas)	77	1,555,120	217,000	14	-22,000	-1	-40,000	-3	
Falcon Reservoir (Texas and Mexico)	(77)	2,653,290	241,000	9	-39,000	-1	-64,000	-2	
TOTAL		2,491,620	522,590	21	-39,540	-2	-133,210	-5	
<b>STATE TOTAL</b>		34,470,430	27,732,110	80	-1,163,790	-3	548,250	2	

**Note:**

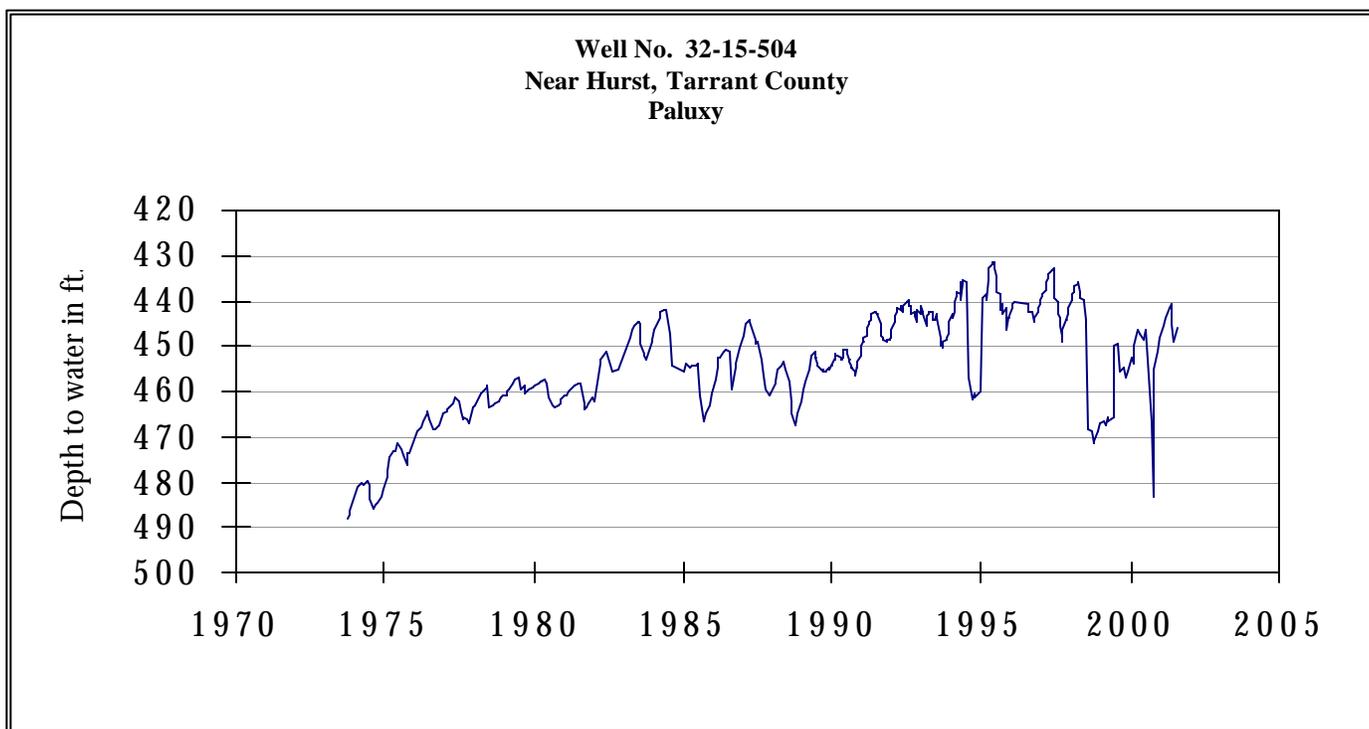
Conservation storage capacity is the space available to store water above the level of invert of lowest outlet works and below the level of top of conservation pool or normal maximum operating level. Conservation storage refers to the volume of water held within the conservation storage space. Not included is any water in flood control storage (above the top of conservation pool or normal maximum operating level), or any water in so called dead storage (in the bottom of the reservoir, below the invert of lowest outlet works and consequently not removable by gravity flow alone.) Percentage of conservation storage is based on the conservation storage capacity of the reservoir and the conservation storage in the reservoir for date shown. Percent change is given by % Change = 100 \* (current conservation storage - past conservation storage)/conservation storage capacity.

Current data are based on elevations near end of month at 77 reservoirs that together represent 98 percent of the total conservation storage capacity of major Texas reservoirs (those with capacity of 5,000 acre-feet or more each). Figures in parentheses for Lake Meredith represent the total conservation storage excluding 58,014 acre-feet of dead storage and are not included in State total. Preliminary figures are shown for the United States' share of conservation storage in International Amistad and International Falcon Reservoirs; the estimates may be subject to revision on completion of international water accounting. Texas (United States' share) and Mexico and are not included in State total.

## JULY GROUND WATER LEVELS IN OBSERVATION WELLS

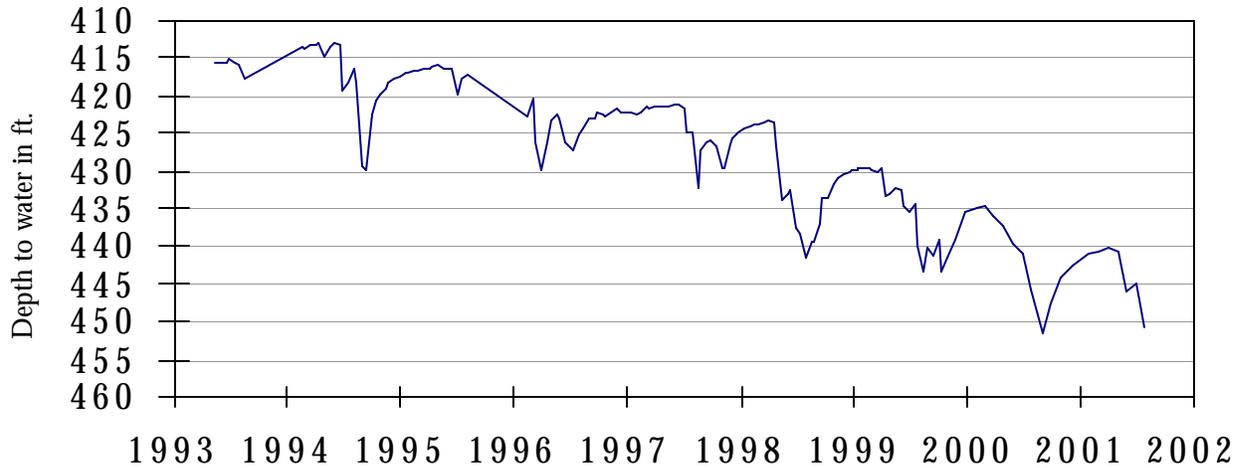


The late July water-level measurement in this Ogallala aquifer well, elevation 3,816 feet above sea level, was 255.86 feet below land surface. The measurement was 2.32 feet below the late May measurement, 2.26 feet below last year's measurement, and 99.86 feet below the initial measurement recorded in 1968.



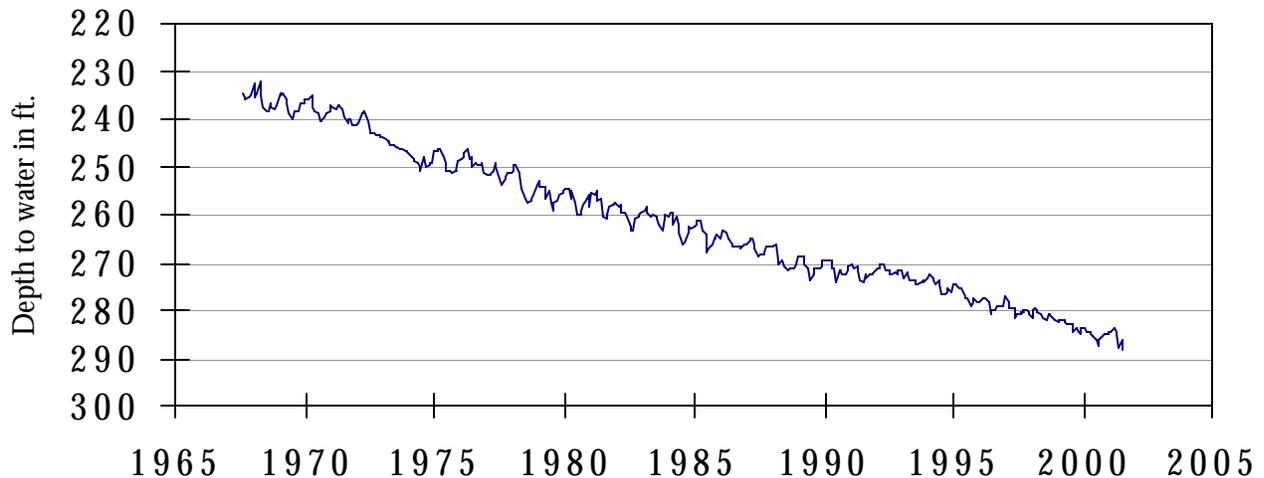
The late July water-level measurement in this Paluxy Formation Trinity aquifer well, elevation 535 feet above sea level, was 446.2 feet below land surface. This measurement was 2.55 feet above last month's measurement, 6.71 feet above last year's measurement, and 52.81 feet below the initial measurement recorded in 1953.

**Well No. 40-35-404  
Gatesville, Coryell County  
Hosston**



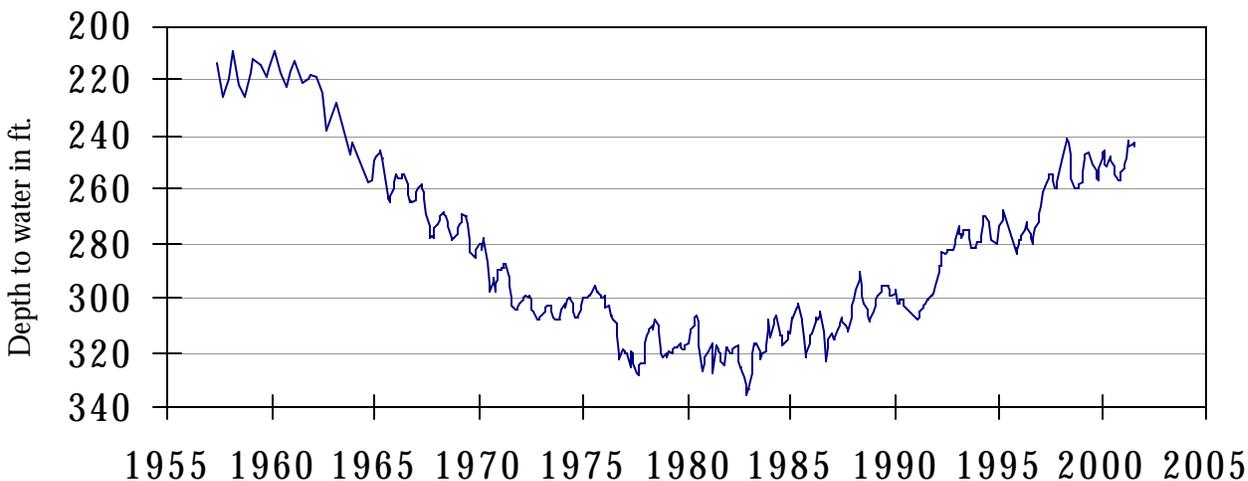
The late July water-level measurement in this Hosston Formation Trinity aquifer well, elevation 823 feet above sea level, was 450.93 feet below land surface. This measurement was 5.88 feet below last month's measurement, 5.16 feet below last year's measurement, and 158.93 feet below the initial measurement recorded in 1955.

**Well No. 49-13-301  
El Paso, El Paso County  
Bolson Deposits**



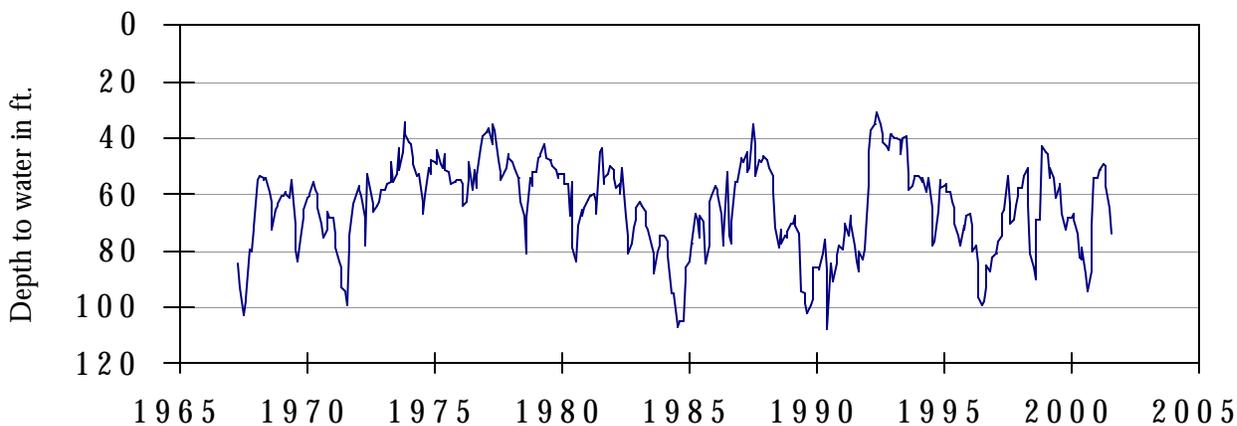
The late July water-level measurement in this Hueco Bolson aquifer well, elevation 3,882 feet above sea level, was 288.38 feet below land surface. This was 2.04 feet below last month's measurement, 1.25 feet below last year's measurement, and 56.48 feet below the initial measurement recorded in 1964.

**Well No. 65-14-409  
Alief, Harris County  
Evangeline**



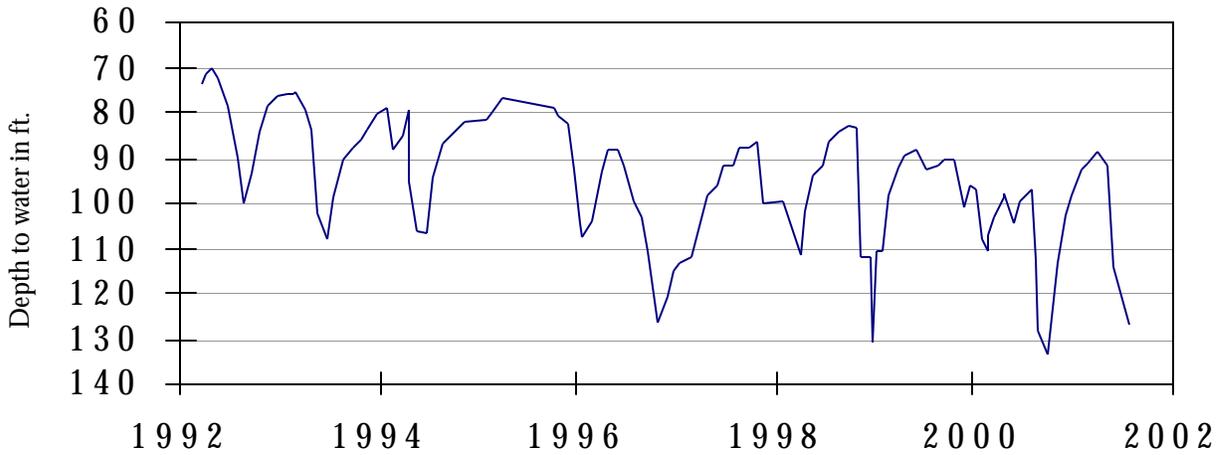
The late July water-level measurement in this Evangeline Formation Gulf Coast aquifer well, elevation 66 feet above sea level, was 244.19 feet below land surface. This was 1.19 feet below last month's measurement, 6.93 feet above last year's measurement, and 140.96 feet below the initial measurement recorded in 1947.

**Well No. 68-37-203 (J-17)  
In San Antonio, Bexar County  
Edwards and Associated Limestones**



The late July water-level measurement in this Edwards (BFZ) aquifer well, elevation 731 feet above sea level, was 73.71 feet below land surface. This was 8.63 feet below last month's measurement, 14.62 feet above last year's measurement, and 14.09 feet below the initial measurement recorded in 1962.

**Well No. 68-60-912  
Between Poteet and Pleasanton, Atascosa County  
Carrizo**



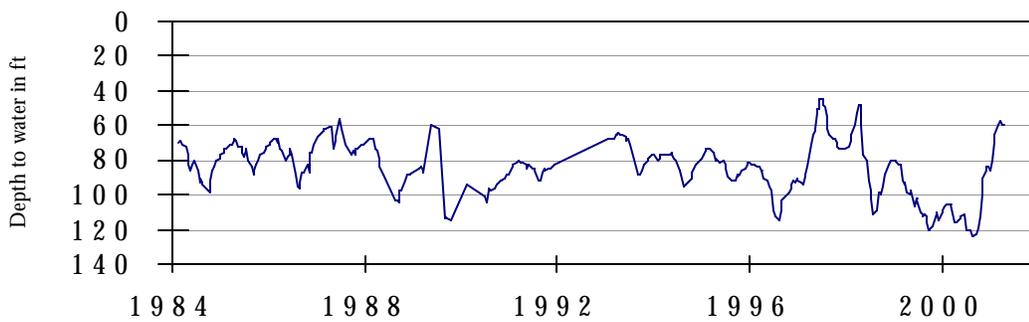
The late July water-level measurement in this Carrizo aquifer well, elevation 446 feet above sea level, was 126.89 feet below land surface. This measurement was 12.92 feet below last month's measurement, 14.11 feet below last year's measurement, and 45.64 feet below the initial measurement recorded in 1965.

***HYDROGRAPH OF THE MONTH***



Each month this space features a new hydrograph (marked with the • symbol on the map) depicting different aquifers and different conditions in Texas.

**Well No 68-02-609  
Kendall County**



This 281 feet deep recorder well, located approximately 10 miles northwest of Boerne, at an elevation of 1,355 feet above sea level, was completed in the Hensel sand and Cow Creek Limestone (Trinity) aquifer. The water-level declines reflect drought periods.

*TEXAS WATER DEVELOPMENT BOARD  
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